

333.915
*J12wqd
1992

MONTANA WATER PLAN

DRAFT

March 6, 1992

Section: Integrated Ground Water Quality and Quantity Management

STATE DOCUMENTS COLLECTION

JUN 18 1992

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

Introduction.....	2
Background	2
Ground Water Allocation	2
Ground Water Quality Protection	2
Water Quality in the Allocation Process	3
Water Quantity in Water Quality Decisions	3
Policy Statement	4
Issues, Options, and Recommendations	4
Issue 1—Coordinate Quantity and Quality	
Permitting	4
Issue 2—Long-term Planning	5
Issue 3—Well Construction Enforcement	6
Issue 4—Unplugged Holes	7
Issue 5—Protection from Mining Impacts	7
Issue 6—Information/Education	8
Plan Implementation.....	9
Legislative Action	9
Administrative Action	9
Financial Requirements and	
Funding Strategies	10
Bibliography	10

PLEASE RETURN

WATER RESOURCES DIVISION • DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

1520 EAST SIXTH AVENUE • HELENA, MONTANA 59620 - 2301 • (406) 444-6637

INTRODUCTION

The use and development of water have been essential to the settlement and growth of Montana. Over the years, several laws and policies have been developed to protect the rights of individuals to use water for a variety of purposes. These early laws and policies focused on the use of water and, with very few exceptions, do not consider the quality of that water.

In response to the growing use and increased potential for water degradation, a separate body of laws and policies has been enacted to protect the quality of Montana's water. While these laws and policies must consider the beneficial use of water, they do not consistently consider the future allocation of water in the state. The result is a general lack of coordination in the management of the state's water. The state's existing legal and institutional framework for water management does not adequately reflect or take into account the integral relationship between water use and water quality.

The Montana State Constitution, however, requires the state to "maintain and improve a clean and healthful environment ... [and to] provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources" (Article IX, section 1), including water quality.

The Constitution also requires the state to recognize "All existing rights to the use of any waters for any useful or beneficial purpose ..." (Article IX, section 3). To satisfy these constitutional mandates, it appears that water use and the protection of water quality should be integrated both in policy and practice.

BACKGROUND

Ground Water Allocation

Ground water is allocated in Montana by permit or notice of completion of a well. Use of ground water at a rate of 35 gallons per minute (gpm) or less, not to exceed 10 acre-feet per year, is granted a water right upon the filing of a notice of completion with the Department of Natural Resources and Conservation (DNRC). The DNRC must issue a certificate of water right if the notice is complete and correct and if the use is outside the boundaries of a controlled ground water area (Water Use Act, Section 85-2-306, MCA).

A permit is required for all wells and developed springs using more than 35 gpm or more than 10 acre-feet per year. If the purpose of water from more than one well or spring from the same source aquifer could have been accom-

plished by a single appropriation, and combined withdrawals exceed 35 gpm or 10 acre-feet per year, a permit also is required. The DNRC must issue a well permit and certificate of water right if water is available; if the use does not adversely affect the water rights of prior appropriators; if the proposed project works are adequate; if the use is beneficial; and if the use is outside the boundaries of a controlled ground water area (Water Use Act, Sections 85-2-306 and 311, MCA).

It should be noted that ground water rights do not include the power to prevent subsequent appropriations from lowering the water table if prior appropriators still can reasonably use their water rights (Water Use Act, Section 85-2-401, MCA).

Ground Water Quality Protection

Numerous laws and regulatory programs in Montana control activities that have the potential to threaten the environment. There are laws that regulate underground storage tanks, septic systems, mining operations, landfills, hazardous waste, and almost every other activity that poses a threat to the environment. Although most of these laws are unrelated, protection of ground water quality is a dominant consideration for each program. Montana's water quality programs are administered by the Department of Health and Environmental Sciences (DHES).

The Water Quality Act (Section 75-5-101 et seq., MCA) is the primary water pollution control authority in Montana. The Water Quality Act states that it is the public policy to

conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation and other beneficial uses; and to provide a comprehensive program for the prevention, abatement and control of water pollution.

The Act also states that any

...waters whose existing quality is higher than the established water quality standards be maintained at that high quality unless it has been affirmatively demonstrated to the [Board of Health and Environmental Sciences] that a change is justifiable as a result of necessary economic or social development and will not preclude present and anticipated uses of these waters.

The Montana Ground Water Pollution Control System (MGWPCS) (Section 16.20.1001 et seq., ARM) is a regulatory program established under the Water Quality Act to control unregulated sources of ground water pollution. Important aspects of the MGWPCS rules are ground water quality standards, a nondegradation requirement, and a permit system. Sources of ground water pollution, such as

a hazardous waste treatment facility or a mine, that obtain permits from other programs or agencies, are not required to obtain a MGWPCS permit. However, these operations still must satisfy the MGWPCS standards and cannot degrade ground water quality. While the nondegradation policy applies to ground water, existing data is inadequate to determine the quality of ground water on a regional basis.

Other statutes addressing the protection of ground water that are administered by DHES include the Public Water Supply Act (Section 75-6-101 et seq., MCA) and the Sanitation in Subdivisions Act (Section 76-4-101 et seq., MCA). Water systems that serve 10 or more families or 25 or more persons at least 60 days a year are considered public water supplies. Individual and multiple-family water supply systems constructed on subdivided parcels of less than 20 acres are subject to the Sanitation in Subdivisions Act.

Waste and contamination of ground water are prohibited under the Water Use Act. Both flowing and nonflowing wells are to be constructed and maintained to prevent the waste, contamination, or pollution of ground water. It should be noted that this section requires the plugging of wells only if water is flowing out of the well. Plugging is not addressed in the statute for purposes of closing a pollution conduit to the aquifer (Water Use Act, Section 85-2-505, MCA).

Ground water quality also is addressed in the Agricultural Chemical Ground Water Protection Act passed by the 1989 Legislature. Under this Act, DHES is responsible for developing and enforcing ground water quality standards for agricultural chemicals. The DHES also is charged in this Act with monitoring, promoting research, and providing public education in cooperation with universities and other state agencies. The Act requires the Department of Agriculture to develop and enforce agricultural chemical ground water management plans aimed at preventing ground water impairment, minimizing agricultural chemicals in ground water, and protecting present and future beneficial uses of ground water. Both agencies now are publishing rules to implement their respective responsibilities under the Act.

The Department of State Lands regulates mining operations to minimize and reclaim impacts to ground water quality and quantity. Both the Department of State Lands and the Department of Health and Environmental Sciences ensure that mining operations are conducted in compliance with the Montana Environmental Policy Act and the Water Quality Act. Coal mining permit applications must include a detailed description of pre-mine hydrology and a reclamation plan that minimizes "disturbance to the hydrologic balance at the mine site and in associated off-site areas and

to the quality and quantity of water in surface-water and ground-water systems both during and after..." mining (Sections 82-4-231, MCA). Coal and uranium prospecting operations must be conducted to completely avoid degradation or diminution of any existing or potential water supply.

Hard rock mining in Montana is regulated under the Metal Mine Reclamation Act (Section 82-4-301 et seq., MCA) and the Water Quality Act. As with coal applications, hard rock permit applications also must contain baseline studies that characterize the existing hydrologic regime. In addition, hard rock applications must contain operating and reclamation plans that demonstrate how ground and surface waters will be protected to ensure long-term compliance with Montana's Water Quality Act. These plans are supplemented by monitoring requirements that agencies use to track the effectiveness of prior planning and implementation. The Act provides for recovery of damages for a water loss in quantity or quality once an investigation establishes that a hard rock mining operation is responsible for the loss.

Water Quality in the Allocation Process

Water quality is considered in the water allocation process through the reasonable use criteria (Water Use Act, Section 85-2-311(2), MCA) and by establishing controlled ground water areas. According to Montana water law, DNRC must consider the reasonable use criteria, including impacts to water quality, for any permit or change applications using ground water in excess of 4,000 acre-feet annually. Given the large quantity of water needed to trigger these criteria, they have not been used to deny or condition any ground water permits or changes.

It is also possible to close an aquifer to further appropriations or restrict or condition ground water allocations on the basis of water quality concerns by establishing a controlled ground water area. The Board of Natural Resources and Conservation, upon a motion of DNRC or by a petition of at least 20 people or one-fourth of the users of ground water in the area, may establish a controlled ground water area. One criteria for designating a controlled ground water area is that excessive withdrawals will cause contaminant migration and degrade [aquifer] quality (Water Use Act, Section 85-2-506, MCA). Only two controlled ground water areas have been created since the law was passed in 1967: South Pines near Terry and Larson Creek in the Bitterroot drainage. No controlled ground water areas have been organized due to water quality concerns.

Water Quantity in Water Quality Decisions

A variety of Montana agencies and programs regulate activities that may potentially affect ground water quality

and quantity. The major emphasis of the environmental permit programs is to protect the environment, including prevention of ground water contamination. The regulated facilities and activities also may have components that impact ground water quantity, such as water supply wells or dewatering conducted for subsurface mining.

Public Water Supply Act standards require that public supply wells be tested to demonstrate that the well can produce one and one-half times the desired low flow rate. The quantity specifications are designed to ensure that an adequate and reliable water supply is available for water users. Small water supply systems covered under the Sanitation in Subdivision Act must provide a sustained yield of at least eight gallons per minute over a two-hour period or five gallons per minute over a four-hour period.

If the specified well yields cannot be achieved, the proposed water system will not be approved by DHES. The approval or disapproval of a water supply system are independent of a water right decision for the same supply well. The DHES and DNRC occasionally will conduct a joint evaluation of the yield tests from a public well to determine the adequacy of the supply and whether it is appropriate to grant a new water right. No analysis of the cumulative impacts on ground water withdrawals caused by multiple private wells clustered in a subdivision is conducted by DNRC.

As part of a permit review, agencies attempt to identify and evaluate all potential impacts to water resources that may be associated with a regulated activity. The proposed activity may be modified or permits may be conditioned to mitigate potential impacts. Mitigation can address both ground water quality and quantity. Measures to protect ground water quality may include redesigning or relocating the facility, requiring a synthetic liner beneath the impoundment, or eliminating the facility altogether by not allowing the impoundment to be constructed in a shallow ground water area. If ground water quantity will be potentially impacted by a proposed production well at a permitted facility, the permitting agency can require the applicant to modify its water withdrawal to reduce or eliminate the impacts. However, ultimate authority to grant or deny a water right permit rests with DNRC.

POLICY STATEMENT

It shall be the policy of the State of Montana to manage and protect ground water quantity and quality as a total resource to ensure aquifer protection and sustainability for existing and future uses.

ISSUES, OPTIONS, AND RECOMMENDATIONS

Issue 1—Coordinate Quantity and Quality Permitting

Permits for ground water allocation and for control of potential ground water pollution sources are granted independently without consideration of cumulative or overlapping impacts.

According to the Water Use Act (Section 85-2-311 (1) (b), MCA), when granting a water right permit an applicant must prove by substantial and credible evidence that “the water rights of a prior appropriator will not be adversely affected.” Some interpret this to include water quality while others do not. Due to the ambiguity, the Department of Natural Resources and Conservation has adopted the practice of evaluating effects on water rights of a prior appropriator based solely on quantity. Therefore, water use permits are not conditioned or denied on the basis of known or potential water quality consequences. Further, when ground water permits are granted, it is not known whether the added aquifer withdrawal will affect the water quality of surrounding users or whether that particular well owner will have water of sufficient quality for his or her intended beneficial use.

Conversely, permitted activities such as underground injection of fluids, land fills, waste water storage and disposal, and mining activities may affect the quality of water for various uses. The Department of Health and Environmental Sciences has the authority to permit all activities that affect ground water quality that are not addressed by other agency laws and regulations. Under the Water Quality Act, DHES requires all regulated activities to adhere to the nondegradation policy. The DHES also considers ground water use when evaluating permit applications (such as Montana Ground Water Pollution Control System permits, subdivision approval, or exemptions from the nondegradation rule). However, DHES does not have the authority to condition the water use of an applicant. Currently, DHES does not regularly report to DNRC any known contamination or permitted activities impacting ground water that could affect current uses of the aquifer or foreclose future uses.

Options Recommended

1. Clarify that DNRC has the authority to condition or deny new water use permits and change of use applications based on a preponderance of the evidence and a consideration of whether:
 - a) The water quality of a prior appropriator would be adversely affected; or

- b) Water quality, as defined by the standards of DHES, would be adversely affected; or
 - c) The ability of discharge permit holder(s) to satisfy effluent limitations would be impaired.
2. The DNRC shall notify discharge permit holders of new water use permit or change of use applications if the issuance of such permits or changes may adversely affect the ability of discharge permit holders to satisfy effluent limitations.
 3. The DNRC and DHES shall establish a process to ensure the water use permitting process adequately considers water quality, and the water quality permitting process adequately considers water quantity.
 4. Amend the Water Use Act (Section 82-2-506, MCA) to allow state or local agencies, including local water quality districts, to petition the Board of Natural Resources and Conservation, based on public health concerns, to establish a controlled ground water area. The board shall give special consideration to aquifers designated as sole source aquifers.
 5. Amend the controlled ground water area statute (Section 85-2-506(2)(c), MCA) to broaden water quality considerations by allowing a petition based on a showing that excessive ground water withdrawals would cause contaminant migration "or" a degradation of ground water quality within the ground water area. This legislation simply would replace "and" with "or."
 6. Require state agencies to develop a central ground water pollution source tracking system for general access through the Natural Resources Information System.

Options Considered But Not Recommended

1. Clarify the Water Use Act (Section 85-2-311, MCA) to allow DNRC to consider ground water quality as criteria for evaluating water right permits so that:
 - a) the ground water allocation would not unreasonably interfere with beneficial use of the aquifer; and
 - b) the application of quality criteria is technically and economically balanced.
2. Develop a Memorandum of Understanding between the Department of Health and Environmental Sciences and the Department of Natural Resources and Conservation with the following agreements:
 - a) Allow DHES to work with DNRC on ground water right permit applications associated with subdivisions or other public water and sewer systems under evaluation by DHES.

- b) Allow DHES and DNRC to initiate planning with local or other government entities on ground water quantity and quality issues.
 - c) Require DHES to notify DNRC when violations of water quality standards have been detected in an aquifer that could impact beneficial uses.
 - d) Require DNRC to inform permit applicants of known water quality standard violations.
 - e) Provide for joint decisions on water allocation and water quality permits for aquifers designated as controlled ground water areas.
3. Require all wells to obtain permits prior to drilling to allow review for water quality and quantity impacts.
 4. Amend the law to allow state agencies to object to proposed ground water allocation and quality permits.
 5. Develop a process through which a local conservation district would be notified prior to a well being drilled. Through a coordinated effort among local, state, and federal agencies with input into ground water management, the conservation district would issue a permit to proceed. This would create a local data base listing locations of drilled wells and abandoned wells, potential ground water problems, and any drilling activities underway in the area. When water wells must be drilled under emergency conditions, a process would be developed that would not delay necessary drilling.

Issue 2—Long-term Planning

Lack of comprehensive, long-term ground water quality-quantity management.

Montana, like many western states, historically has reacted to ground water problems in a piecemeal fashion, creating a number of programs and regulatory responses that might duplicate each other. However, it is more cost-effective to prevent ground water problems than to react to overdrafts and contamination after the fact. A proactive approach to ground water management is possible to varying degrees. The focus would be on prevention, public education, streamlining regulation, and more effective and efficient coordination of ground water quality-quantity management.

Options Recommended

1. The Department of Natural Resources and Conservation shall create a State Ground Water Coordination Committee. The committee would include representatives of state agencies involved in ground water-related activities, and may include federal and local

governments, public and private interest groups, and interested citizens. The committee would serve and work under the direction of the State Water Plan Advisory Council. The purpose of the committee would be to develop a state ground water plan to coordinate ground water management and identify and address management gaps. The goal would be to prevent ground water pollution and aquifer overdraft in order to sustain current and future beneficial uses.

- a) The committee will participate in the new EPA process for developing a comprehensive state ground water protection program. This process should ensure that Montana assumes the lead role and has final jurisdiction in implementing the program.
 - b) The committee, through its member agencies, will coordinate with the conservation districts to develop and implement nonregulatory, local ground water management plans.
2. The legislature should continue to support the intent and appropriate funding for implementation of the Montana Ground Water Assessment Act to facilitate ground water management and planning.

Options Considered But Not Recommended

1. Legislate the creation of local ground water management areas. The purpose of ground water management areas would be to allow planning for specific aquifers in order to (1) protect the quality and quantity of ground water; (2) meet future water needs while protecting existing water rights; and (3) provide for effective and coordinated management of the ground water resource.
2. Amend the law to allow local water quality districts to request basin closure, and/or object to new permits based on water quantity or quality concerns.
3. Develop a comprehensive ground water management plan by conducting a study to (1) evaluate existing Montana water laws, and (2) develop the most effective and efficient process and organizational structure for managing ground water in Montana at the state and local levels (disregarding current agency responsibilities). A part of the study would evaluate those western states that have water resource agencies with both water quantity and quality jurisdiction. Based on these assessments, determine whether there is a better organizational framework for management of the state's ground water resource.

Issue 3—Well Construction Enforcement

Inadequate well construction standards enforcement.

More than 2,000 water supply wells are drilled and constructed each year in Montana. If not properly constructed and grouted, wells may allow pollutants from land surfaces and from other aquifers to degrade or contaminate ground water systems. The Board of Water Well Contractors has adopted minimum well construction standards to prevent contamination in order to protect the water supply of well users. The DNRC water resources regional office staff are used to enforce well construction standards. Currently, DNRC staff must contact a driller in advance to determine the location for an evaluation. This procedure hinders ground water quantity and quality management because it does not allow for unannounced random inspections or proper enforcement.

The Board of Water Well Contractors licenses well drillers and investigates complaints. During 1991, 23 written complaints were filed by well owners against 15 drillers. The complaints concerned improper grouting, pumping rates less than those shown on well logs, failure to case a hole, failure to complete a well properly, and muddy well water. Several job sites were closed down for failure to have a licensed individual on site. Approximately 50 construction standard violation letters were mailed as the result of a DNRC regional office review of well log reports.

Options Recommended

1. Require the Board of Water Well Contractors to direct all drillers, on a rotating basis, to give prior notice to DNRC of the location of their drilling operations over a specific period of time to allow well inspectors to perform random construction standard compliance evaluations.

Options Considered But Not Recommended

1. Authorize an adequate number of well inspector positions that are independent and qualified. Place the positions in DNRC regional offices to enforce well construction standards. The inspectors will report to the Board of Water Well Contractors, which retains the authority for action against violators. Funding options include the legislature (general fund), fees assessed on water well owners, or fees assessed on well drillers.
2. Require well drillers to call DNRC, toll free, prior to drilling and constructing a water well or to send in a notice card 72 hours in advance. This would allow the regional office staff to randomly check about 10 percent of the wells under construction to ensure compliance with well construction standards. The costs of implementing this option would be associated with the toll-free number and travel time for investigations.
3. Require local county governments to enforce compliance with well construction standards. This approach

would be similar to that in place for lifting septic system restrictions and meeting drain field construction standards. Since more than 90 percent of water wells drilled are associated with domestic home use, local county inspectors would be responsible for ensuring compliance both with water well and septic system construction standards.

4. Provide a voluntary service where an authorized county or regional office official can, upon request, inspect and ensure compliance with proper water well construction standards for a fee.

Issue 4—Unplugged Holes

Inconsistent standards, procedures, specificity, and enforcement in the construction and plugging of mineral exploration, geotechnical, and seismic holes may result in ground water problems.

It is not known how many abandoned or unused mineral exploration, geotechnical, or seismic holes exist in Montana. Estimates vary greatly, but agencies and counties agree that thousands of unplugged bore holes exist throughout the state. According to the Montana Bureau of Mines and Geology, abandoned bore holes that penetrate more than one aquifer will result in the drawdown of one aquifer as it flows down gradient into another aquifer. The intermixing of aquifers results in water-level and hydrostatic-pressure declines in the up-gradient aquifer. An example of this phenomenon is reported by the Montana Bureau of Mines and Geology in the Colstrip area finding that

The greatest water-level declines have resulted from losses in hydrostatic pressure in the McKay coal bed, even where the bed is not disturbed by mining ... The large numbers of exploration and core holes drilled before mining are suggested as the likely cause.

The aquifers commonly will have differing water quality and hydrostatic pressures, so more pristine ground water systems can be degraded by mixing with an aquifer of lesser quality. Land use practices may degrade a shallow ground water system that can flow down gradient through unplugged holes into a deeper system and introduce contaminants.

Currently, counties are responsible for locating and plugging abandoned holes when a liable company or individual cannot be found. Many times, holes were left by exploration operations from the early to mid 1900s, and the companies no longer exist. Counties do not have the resources to address abandoned bore holes.

The Department of State Lands and the Board of Oil and Gas do have hole plugging regulations for current operations. However, plugging requirements vary greatly for

different types of holes and are enforced inconsistently. Given the probable water quality and quantity impacts to aquifers throughout Montana, the state should take the lead in providing consistent regulations and in plugging holes to protect ground water for current and future beneficial uses.

Options Recommended

1. Direct the Department of State Lands in the area of mining, and the Board of Oil and Gas in the area of oil and gas, to ensure that abandoned or unused mineral exploration, geotechnical, and seismic holes are properly plugged. A high priority should be assigned to areas with known problems from unplugged holes. Incorporate information from public and private sources into an inventory of abandoned and unused bore holes.
2. Encourage use of the resource indemnity trust fund to address nonrenewable resource impacts.
3. The appropriate state agencies shall investigate all hole-plugging requirements and develop a recommendation for a consistent, statewide hole-plugging program. The recommendations should include developing plugging requirements for geotechnical holes and other holes when no regulations exist, and encouraging research into economically feasible and environmentally sound plugging methods and materials.

Options Considered But Not Recommended

None.

Issue 5—Protection from Mining Impacts

Inconsistent protection of ground water quality and quantity from mining impacts.

Protection of ground water quality and quantity is an important issue associated with mining. Mining activities, if not properly conducted, have the potential to contaminate ground water or deplete aquifers. According to a 20-year study by the Montana Bureau of Mines and Geology, "mine-inflow rates and associated water-level or hydrostatic-pressure declines are influenced greatly by the positions of mines within ground-water flow systems." Some mining operations use chemical reagents such as cyanide, acid bromide, and acid chloride, which can leach from the site and pose water quality problems. In addition, mine tailings can leach residual reagents as well as heavy metals such as arsenic. While responsible operators make every effort to minimize environmental impacts, total leachate confinement is not technologically possible, and concern about protection of water resources from mining impacts is a high priority.

Currently, mine ground water discharge plans are reviewed by the Department of State Lands, with oversight

by the Department of Health and Environmental Sciences. The Department of State Lands investigates complaints of water quantity and quality impacts related to mining. If a complaint related to a coal mine is filed, the Coal and Uranium Bureau must report its findings to the complainant within 90 days of receipt of the complaint. If mine-related activities are responsible for the loss either of water quantity or quality, suitable water must be provided immediately. If the unsuitable water is not permanently replaced, the operator's mine permit will be suspended until substitute water is made available.

If a complaint related to a hard rock mine is filed, the Hard Rock Bureau processes the complaint as rapidly as possible, although the Metal Mine Reclamation Act does not define time frames and does not require immediate water replacement. However, the Metal Mine Reclamation Act does provide for an owner to recover damages for a water loss of quantity or quality. The Hard Rock Bureau is required to investigate the complaint and may require the operator to conduct additional studies. If the finding concludes that the loss of water quality or quantity is caused by the operation, the operator must replace the water in like quality and quantity, and the owner can recover damages. If the water is not replaced, the operator's permits may be suspended until substitute water is supplied.

Due to the often-complex nature of the ground water resource, ensuring its protection through statutes, regulations, and investigative procedures may be difficult. When investigating complaints, the agencies may find that baseline studies have not always been adequate to resolve specific questions of impacts to ground water quality and quantity that arise after operations begin.

Options Recommended

1. Amend the Metal Mine Reclamation Act rules (Section 26.4.100 et seq., ARM) to include the Hard Rock Bureau guidelines which define the scope and parameters of study for baseline investigations.
2. The Department of State Lands shall encourage mining companies to solicit citizen participation during the early stages of large-scale mining and exploration programs prior to application submittal. Public input during the development of baseline inventory plans may protect both mining companies and citizens during investigations of impacts to ground water resources once activities begin. While it is recognized that the Department of State Lands must retain final approval of baseline data, public comments should be incorporated into the planning process.

Options Considered But Not Recommended

1. Amend the Metal Mine Reclamation Act to require adequate bonding to replace or restore the quantity or

quality of water resources that are reasonably foreseen to be at risk.

2. Amend the Metal Mine Reclamation Act to establish appropriate time frames for hard rock complaint response and resolution.
3. Amend the Metal Mine Reclamation Act to establish proper limitation of the confidentiality clause pertaining to small miners exclusions and exploration licenses to specific proprietary geologic information. Define proprietary geologic information and large-scale exploration projects through the rule-making process.
4. Amend the Metal Mine Reclamation Act to allow the Department of State Lands to collect fees from mining companies to fund investigations of alleged mine-related ground water damages.
5. Authorize the Department of State Lands to use interest on mining bonds to fund investigations of alleged ground water damages from mining operations.

Issue 6—Information/Education

Water resource information is not easily attainable by citizens to assist in private decision-making.

Home, ranch, and business owners throughout Montana are faced with many decisions that affect their water quality and quantity such as well location, proper well construction, quality testing, and septic system placement. It also may be difficult for citizens to comply with laws and regulations when they are not aware of pertinent information: for example, where to properly dispose of waste oil or how often they should pump their septic tanks. Widespread dissemination of resource-related information would assist individuals in protecting their water resources.

Options Recommended

1. The Water Resources Center, in consultation with appropriate agencies, University Extension, Ground Water Information Center, and Natural Resources Information System, shall develop avenues for the dissemination of water-related information and for water resource public education. These strategies may include:
 - a) Requesting the Water Education for Teachers (WET) program to incorporate information on ground water protection strategies.
 - b) Working with counties, conservation districts, realtors, county extension agents, and other local entities to distribute DNRC's well brochure and other informational materials.

- c) Developing radio and television public service announcements related to water quality and quantity conservation.
- d) Providing a toll-free number to answer or direct water-related questions.

Options Considered But Not Recommended

1. Hire a water education/information specialist.

PLAN IMPLEMENTATION

Legislative Action

The legislature needs to revise Section 85-2-311, MCA, to specify that DNRC has the authority to condition or deny new water use permits or change of use applications based on a preponderance of the evidence and a consideration of whether: (1) the water quality of a prior appropriator would be adversely affected; (2) water quality, as defined by the standards of DHES, would be adversely affected; or (3) the ability of discharge permit holder(s) to satisfy effluent limitations would be impaired.

The legislature needs to amend the Water Use Act (Section 85-2-506, MCA) to allow state and local agencies and local water quality districts to petition the Board of Natural Resources and Conservation to establish a controlled ground water area.

The legislature needs to amend the Water Use Act (Section 85-2-506(2)(e), MCA) to replace "and" with "or" so that a petition for a controlled ground water area may be based on a showing that excessive ground water withdrawals would cause contaminant migration "or" a degradation of ground water quality.

The legislature needs to support the intent of and appropriate funding for implementation of the Montana Ground Water Assessment Act.

The legislature needs to allocate appropriate resource indemnity trust funds to address nonrenewable resource impacts including a plugging program for abandoned and unused bore holes.

Administrative Action

The Department of Health and Environmental Sciences and the Department of Natural Resources and Conservation need to establish a process to ensure that the water use permitting process adequately considers water quality, and that the water quality permitting process adequately considers water quantity.

The Department of Natural Resources and Conservation needs to provide legal notification to any potentially

affected water quality discharge permittee of each application for a water right permit or for change of use.

The Board of Natural Resources and Conservation needs to give special consideration to sole source aquifers in establishing controlled ground water areas.

The Department of Health and Environmental Sciences, Department of State Lands, Department of Natural Resources and Conservation, and Department of Agriculture need to develop a central ground water pollution tracking system for general access through the Natural Resources Information System.

The Department of Natural Resources and Conservation needs to create a State Ground Water Coordination Committee. The committee would include representatives of state agencies involved in ground water-related activities, and may include federal and local governments, public and private interest groups, and interested citizens. The committee would serve and work under the direction of the State Water Plan Advisory Council.

The State Ground Water Coordination Committee shall develop a state ground water plan to coordinate ground water management, and identify and address management gaps. The committee shall submit recommendations to the State Water Plan Advisory Council. The initial tasks of the committee are to:

1. Participate in the EPA ground water initiative by facilitating the development of a comprehensive state ground water protection program.
2. Cooperate with conservation districts in the development and implementation of local ground water management plans.

The Board of Water Well Contractors needs to establish a system requiring all drillers, on a rotating basis, to give prior notice to DNRC of the location of their drilling operations over a specified period of time to allow for random construction standard compliance evaluations.

The Department of Natural Resources and Conservation needs to develop an efficient system to receive drilling locations from well drillers for use by well inspectors.

The Department of State Lands and the Board of Oil and Gas need to initiate a program to plug abandoned or unused mineral exploration, geotechnical, and seismic holes. Efforts should focus on areas with known problems from unplugged holes. The department and board will collect information from public and private sources to inventory abandoned and unused holes.

The Department of State Lands and Board of Oil and Gas need to investigate mineral exploration, geotechnical, and seismic hole-plugging requirements, and develop

recommendations for consistent standards. The recommendations should include plugging requirements for geotechnical and other holes when no regulations exist. The department and board should encourage research into economically feasible and environmentally sound plugging materials.

The Department of State Lands needs to amend the Metal Mine Reclamation Act rules (Section 26.4.100 et seq., ARM) to include the Hard Rock Bureau guidelines for hydrologic studies.

The Department of State Lands needs to encourage mining companies to involve the public at the earliest stages of large-scale mining and exploration programs prior to application submittal.

The Water Resources Center needs to request the Water Education for Teachers program to incorporate information on ground water protection strategies; work with counties, conservation districts, realtors, county extension agents, and other local entities to distribute DNRC's well brochure to new home builders and other citizens; develop public service announcements related to ground water quality and quantity conservation; and provide a central contact to direct water-related questions.

Financial Requirements and Funding Strategies

Funding will be required to support the State Ground Water Coordination Committee. An estimated funding level of \$50,000 would be required. An EPA grant should be pursued through the new comprehensive state ground

water program to fund the committee, along with a 25 percent (\$12,500) state match allocated equally among participating agencies.

Funding will be required for well inspections and a toll-free telephone line. Nominal fees (\$10-\$20) on water right certificates, permits, and public water supplies should be levied to fund inspections that will benefit these ground water users. Similar fees generating approximately \$90,000 are scheduled to sunset on July 1, 1993, which are currently allocated to fund the initial phase of the Ground Water Assessment Act implementation.

Funding will be required to support the hole-plugging program and inventory. Since the magnitude of this endeavor would require substantial funding, the legislature should decide the appropriate amount of resource indemnity trust funds that should be devoted to this effort.

BIBLIOGRAPHY

- Getches, David H., Lawrence J. MacDonnell, and Teresa A. Rice. 1991. *Controlling water use: the unfinished business of water quality protection*. Natural Resources Law Center, University of Colorado School of Law.
- VanVoast, Wayne A. and Jon C. Reiten. 1988. *Hydro-geologic responses: twenty years of surface coal mining in southeastern Montana*. Memoir 62. Butte, Mont.: Montana Bureau of Mines and Geology, Montana College of Mineral Science and Technology.

Plan Implementation Summary

<u>Action</u>	<u>Responsibility</u>	<u>Deadline</u>
Issue 1-Coordinate quantity and quality permitting		
Allow DNRC to consider water quality	Legislature	May 1993
Develop a process to notify discharge permit holders	DNRC	December 1993
Establish a process to consider quantity in quality permits	DHES	December 1993
Allow state and local agencies to petition for controlled ground water areas	Legislature	May 1993
Amend controlled ground water area statute to allow showing of contaminant migration "or" degradation	Legislature	May 1993
Develop pollution source tracking system	DHES, DSL, DNRC, DoAg	December 1993
Issue 2-Long-term planning		
Establish state ground water coordination committee (SGWCC)	DNRC	September 1992
Develop a state comprehensive ground water program	SGWCC	March 1994
Assist conservation districts with local ground water management planning	SGWCC	As needed
Support funding for ground water assessment program	Legislature	July 1993
Issue 3- Well construction enforcement		
Develop a driller notification system	BWVC/DNRC	March 1993
Issue 4-Unplugged holes		
Hole-plugging program and inventory	DSL and BO&G	June 1993/Ongoing
Develop consistent hole-plugging requirements	DSL and BO&G	October 1993
Allocate RIT funds to plug holes	Legislature	July 1993
Issue 5-Protection from mining impacts		
Amend rules to reflect guidelines for hydrologic studies	DSL	June 1993
Encourage mining companies to obtain early public input	DSL	September 1992
Issue 6-Information/education		
Request WET program to include water quality-quantity information	Water Resources Center	September 1992
Distribute DNRC well brochures	Counties and WRC	September 1992/ Ongoing
Develop public service announcements	WRC	September 1992/ Ongoing
Provide toll-free number to answer or direct water questions	WRC	December 1992/ Ongoing

